

What is claimed is:

1. A fuel cell comprising; an electrolyte made of a proton conductor, a fuel electrode provided on one side of the electrolyte, an oxidizer electrode provided on another side of the electrolyte, at least one internal electrode provided in the electrolyte, and voltage application means for applying voltage to the at least internal electrode.

2. The fuel cell according to Claim 1, wherein the voltage application means is a means for connecting a power source between the at least internal electrode and one of the fuel electrode and the oxidizer electrode.

3. The fuel cell according to Claim 1, wherein the voltage application means is a means for connecting, by way of one of a conductive member and a load, between the at least internal electrode and one of the fuel electrode and the oxidizer electrode.

4. The fuel cell according to Claim 1, wherein the internal electrode is layered structure.

5. The fuel cell according to Claim 1, wherein the electrolyte is an ion exchange membrane.

6. The fuel cell according to Claim 1, wherein hydrogen or methanol is used as a fuel.

7. A method of controlling a fuel cell having an electrolyte made of a proton conductor, a fuel electrode provided on one side of the electrolyte, and an oxidizer electrode provided on another

side of the electrolyte, the method comprising a step of controlling a movement of a fuel or oxidizer permeated in the electrolyte by providing at least one internal electrode in the electrolyte and applying voltage capable of oxidizing the fuel or reducing the oxidizer on the internal electrode.

8. A method of controlling a fuel cell having an electrolyte made of a proton conductor, a fuel electrode provided on one side of the electrolyte, and an oxidizer electrode provided on another side of the electrolyte, the method comprising a step of suppressing a generation of radicals in the fuel cell by providing at least one internal electrode in the electrolyte and applying voltage on the internal electrode.